

brilliant success in widening its spectrum through modification of the side chain attached to 6APA. The first major development in extending the spectrum came with their synthesis of methicillin by the introduction of two methoxy groups into the side chain so that 6APA could be protected from hydrolytic inactivation by the penicillinase of resistant staphylococci. More recently they found that attaching an amino—or a carboxy—group to the side chain produced two compounds with greatly increased activity against those Gram-negative bacilli that had been clinically resistant to penicillin. Alpha-aminobenzylpenicillin (ampicillin) has been of great value in the treatment of *Salmonella*, *Proteus E. coli*, and *Hemophilus influenzae* infections, while the synthesis of alpha carboxybenzylpenicillin (carbenicillin) has made available, at last, a nontoxic drug that can be used effectively in serious *Pseudomonas* infections.

Isolation of 6APA also led to a search by its discoverers for a non-allergenic penicillin. At first 6APA was thought to be allergenic itself and hence that a nonallergenic penicillin was unlikely, but later studies by Batchelor's group disclosed that an impurity was responsible for allergy. This impurity is a conjugate of 6APA or benzylpenicillin with a protein (D-benzylpenicilloyl protein) and probably develops during manufacture. When the impurity was removed by passage through a sephadex column or by dialysis, neither benzylpenicillin nor 6APA was allergenic. This discovery and others, on the immunochemistry of penicillin allergy, offer substantial hope for the solution of the immunologic disturbances that have occurred from the use of penicillin.

In my opinion, the opportunities are so good for the eventual production of nontoxic penicillin with a universal spectrum of antibacterial activity, that other antibacterial drugs will have little usefulness. The achievement of this important goal in medicine can only come about, however, from support of research at all levels of chemotherapeutic development involving the biochemist, microbiologist, immunochemist and clinical investigator. Unfortunately the tragic restriction of federal support for medical research of this type will hold back seriously the progress that could be made in eliminating harmful reactions from antibiotic therapy.

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## On a Definition of Health

THE REPORT OF THE American Medical Association's Committee on Planning and Development faces up to the important question of what is to be today's working definition of health and what is to be the role of the organized medical profession with respect to it. This report is now undergoing review by state and county medical societies and its recommendations are to be considered by the appropriate Reference Committee at the AMA Convention this June. The need to agree on a definition of health is obvious. The need becomes pressing when one considers the mounting national concern with health and the bald fact that health care is already a \$60 billion a year industry that is still growing and soon to become the largest such enterprise in the nation.

The Committee's report calls for the AMA to adopt officially the World Health Organization definition:

*"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."*

The thought of such an all-encompassing definition with all its ramifications in health care stuns many physicians and other health care personnel. The traditional view has been that health means the absence of illness and that the aim of the practitioner is to restore this "health" to the afflicted patient. The word itself derives from "whole" and to heal really means to make whole. Recently, however, the concept of whole in health has been gaining significantly. Medical progress has shown that to be healthy requires that a person be in satisfactory adjustment with many and various aspects of his internal and external environment which affect him and with which he must interact. This goes somewhat beyond just the wholeness of his mind and body. It includes his physical, social, economic, cultural and even political circumstances and environment. That this is true is becoming quite clear to anyone who seeks to provide health through health care services in the urban or rural ghettos, for example, where quite evidently personal health is inseparable from the whole situation. In the further dimension of the closed earth system and its problems of population, resources, pollution, ecological balance and human behavior, the sameness of *health* and *whole* takes on yet a new meaning and a new and very pertinent reality.

The traditional view of health and healing is certainly inadequate in this kind of world. The broader WHO definition much more nearly fills the bill.

As a corollary to accepting this definition of health, the AMA Committee on Planning and Development goes on to recommend that "AMA adopt an active role and take the initiative in developing *all* plans and programs for health care in *all* their ramifications and that it encourage and assist state and county medical societies to do the same at their respective levels."

This, too, is a bold recommendation. Yet there is really no alternative for a profession which professes primary responsibility for health and for the health team in today's society. To be sure, medi-

cine cannot do it alone. Multidisciplinary action, unprecedented cooperation among health professionals and new roles for many physicians will be required. But this is nothing new for physicians. The specifics can be spelled out as the problems are more precisely identified. The important thing is to make an imaginative and determined start.

The AMA House of Delegates should take the bold step. It should recognize the definition of health for what it has come to be in today's world. It should set the AMA on an exciting new course of innovation and leadership. This is clearly in the interest of the public, the profession, and perhaps even human ecology. In today's jargon it will make the AMA much more *relevant* as well as much more effective.